

Application Serial No.: 10/099,822
Amdt. dated May 4, 2005
Reply to Final Office Action of January 15, 2005

REMARKS/ARGUMENTS

The Final Office Action dated January 13, 2005 and the references cited therein have been carefully considered. In response to the Final Office Action, Applicant has canceled all of the pending Claims 7-15 and added new Claims 16-32 which, when considered with the remarks set forth below, are deemed to place the case in condition for allowance.

This Amendment is being filed concurrently with a Request for Continued Examination, a Petition for a one-month extension of time and a new Power of Attorney signed by the Applicant. As a result of the present Amendment, Claims 16-32 remain in the case for continued prosecution.

In the Final Office Action, Claims 7-15 have been rejected under 35 U.S.C. §112 second paragraph as being indefinite. Claims 1-4 stand rejected under 35 U.S.C. §102(b) as being clearly anticipated by U.S. Patent No. 3,911,898 to Leachman, Jr. Claims 3-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,995,857 to Arnold in view of U.S. Patent No. 6,585,636 to Aldrich and U.S. Patent No. 6,132,363 to Freed et al. Claims 7-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Leachman patent in view of U.S. Patent No. 5,112,349 to Summers et al. Claims 11 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Leachman in view of Summers and further in view of Freed. Claims 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Leachman in view of Summers and further in view of U.S. Patent No. 4,955,856 to Phillips. Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Leachman in view of Summers and Freed and further in view of U.S. Patent No. 6,146,325 to Lewis et al.

In response to the Final Office Action, Applicant has cancelled all of the pending Claims 1-15 and replaced them with new Claims 16-32. New independent Claim 16 defines a ventricular assist device including at least one linear flow blood pump, a pacemaker for sending electrical pulses to the patient's heart, a monitor for measuring clinical signals from the heart and from at least one other organ and a control means in communication with the

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flow blood linear pump, the pacemaker and the monitor. The control means further includes an input means for entering a command and simultaneously controls the linear flow blood pump and the pacemaker based on the entered command and the clinical signals measured by the monitor. It is respectfully submitted that none of the cited prior art references, taken alone or combined discloses a device including a linear flow blood pump, a pacemaker and a control means for simultaneously controlling the linear flow blood pump and the pacemaker based on an entered command and clinical signals from the heart and at least one other organ measured by a monitor. Accordingly, it is respectfully submitted that Claim 16, and the claims that depend therefrom, patentably distinguish over the prior art.

New independent Claim 25 defines a method for restoring a damaged heart including the steps of sending electrical pulses to the heart via an implanted pacemaker, measuring clinical signals from the heart and at least one other organ, and controlling the pacemaker and a linear flow blood pump based on an entered command and the measured clinical signals. Again, it is respectfully submitted that none of the prior art references, taken alone or combined disclose a method including the step of simultaneously controlling a pacemaker and a linear flow blood pump based on an entered command and measured clinical signals from the heart and at least one other organ. Accordingly, it is respectfully submitted that Claim 25, and the claims that depend therefrom, patentably distinguish over the prior art.

In particular, the cited primary Leachman reference discloses a heart assist method and device including a blood pump that is operated to maintain a pre-programmed pressure at the heart ventricle discharge during systolic cardiac pulsation. A pacemaker 110 can be provided to send an electrical signal to the heart in response to a timing pulse produced by a flow wave form generator, which is synchronized with the autonomic operation of the pump.

In contrast, as first noted by the Examiner, the Leachman patent does not disclose use of a linear flow blood pump. Additionally, the feedback system disclosed in the Leachman patent for controlling the pump and the pacemaker is entirely different than that of the claimed invention. Specifically, the pacemaker is controlled in synchronization with operation of the blood pump. There is no mention in Leachman of measuring clinical signals

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from the heart and from at least one other organ of the patient as a basis for controlling the pacemaker and the blood pump. Moreover, there is no teaching or suggestion in Leachman of providing a control means with an input means for entering a command which is used together with the measured clinical signals for simultaneously controlling a linear flow blood pump and a pacemaker.

With respect to the remaining cited references, none of these references, taken alone or combined, disclose all of these features. Therefore, it is respectfully submitted that new Claims 16-31 are patentably distinguished over the prior art.

In view of the foregoing amendment and remarks, favorable consideration and allowance of the application with new Claims 16-32 are respectfully solicited. If the Examiner believes that a telephone interview would assist in moving the application toward allowance, he is respectfully invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,



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